

# SUSTAINABILITY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL

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## 1.0 PURPOSE

The Directorate of Environmental Compliance and Management (DECAM) prepared this Sustainability and Environmental Management System (SEMS) Manual on behalf of the Fort Carson Command as a tool to help guide the integration of environmental, social, and economic awareness into daily business practices and ensure Installation sustainability. Fort Carson is embedded in and interdependent with its natural environment and social systems on and off the Installation. Contributing to the health of the overall, larger systems will ensure ongoing health for the Installation.

"It is the web of relationships that determines the character of the enterprise, its capabilities, and its capacity to learn and grow."

*-Peter M. Senge (Founder, Center for Organizational Learning, MIT)*

This Manual is designed to provide Fort Carson personnel with a starting point to create the SEMS Implementation Plan by providing a brief overview of what a SEMS is, defining the scope of Fort Carson's SEMS, describing the current status of particular elements based on the Gap Analysis (EnviroGroup Limited, Oct 29, 2003), providing definitions for commonly used SEMS terms, and describing the core elements of the SEMS.

## 2.0 BACKGROUND

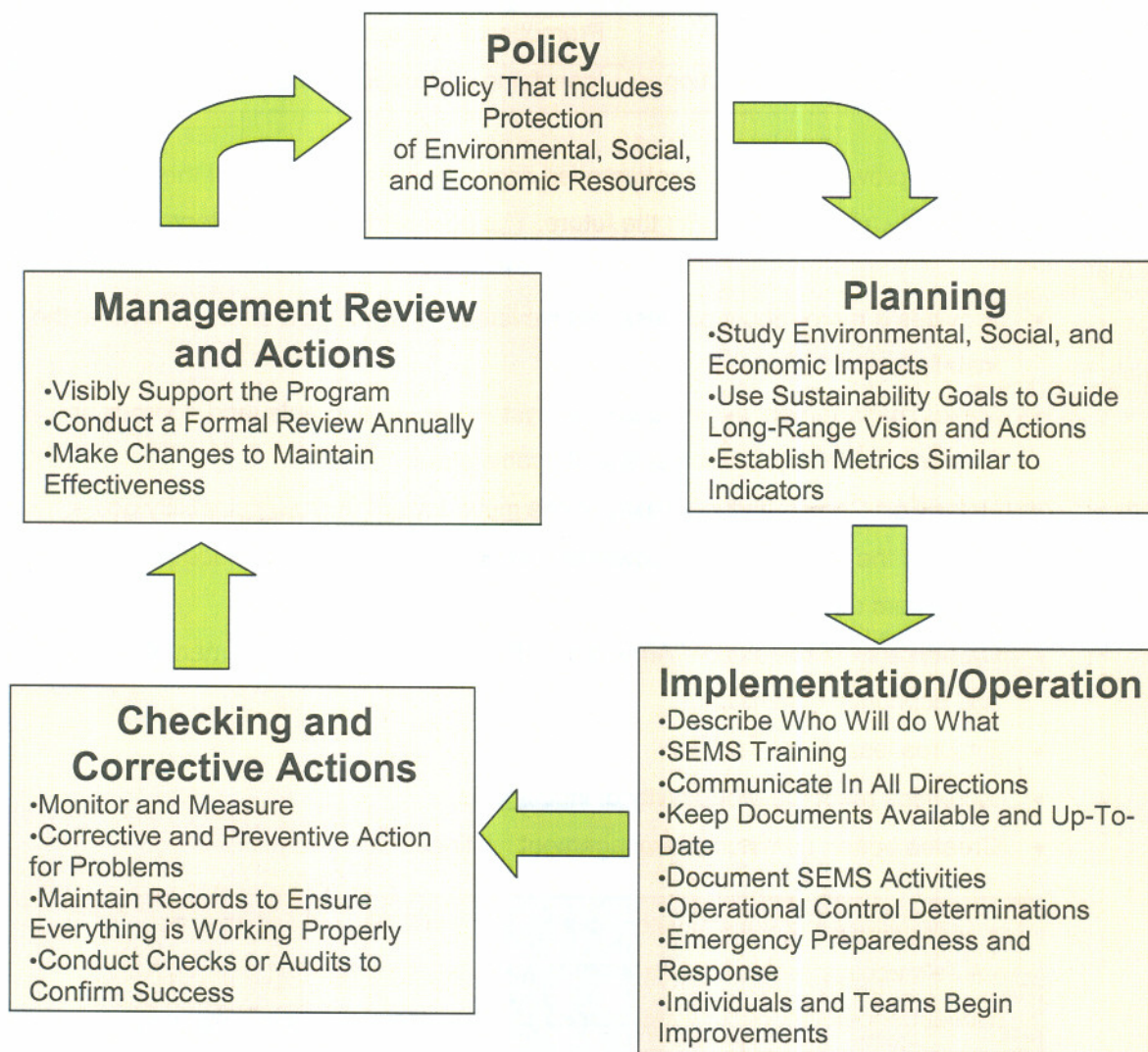
Executive Order (EO) 13148, "Greening the Government Through Leadership in Environmental Management" established a 2005 Environmental Management System (EMS) implementation goal for all Federal Facilities. President Bush and the current administration support this position. The Department of Defense (DOD) also requires an EMS to be implemented at all of its facilities through DOD Memorandum 5 Apr 2002 by E. C. Aldridge, Jr., Undersecretary of Defense. Fort Carson will develop its EMS based on the Installation Organization for Standardization (ISO) 14001 Standard and the principles of sustainability adopted during the first Installation Sustainability Conference in Sep 2001.

A SEMS is defined as "The part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the sustainability and environmental policy and supporting continual improvement." The "Sustainability" in SEMS is the strategic planning principle that will support the Installation's continued ability to remain well postured to train and equip soldiers, develop future leaders,

grow Army families, and remain a committed community partner now and into the future. The consideration for economic, social and environmental impacts at the core of sustainability fully supports Fort Carson's vision of providing combat-ready forces for the 21<sup>st</sup> Century Combatant Commander and Joint Team.

The core elements of the SEMS include a sustainability and environmental policy, a planning stage, implementation, checking and corrective action, and management review (Figure 2.1).

**Figure 2.1 SEMS Structure and Elements**





With an effective SEMS, Fort Carson's mission goals will be enhanced. Training, mobilizing and deploying combat-ready forces are activities supported by healthy, realistic training lands, which sustainability supports through its emphasis on the environment.

Sustainability's focus on economic efficiency and care for soldiers, their families and communities near the Installation will help enhance the responsiveness, efficiency and sustainability of the Installation, Post Mobilization Training Center, and power projection platform. Fort Carson believes taking a more sustainable approach will reap positive benefits for its missions as described in the table below.

| Figure 2.2 Fort Carson Business Benefits |   |
|--|---|
| Improved operational efficiency          | Generating increased savings              |
| Improved management of risk              | Avoiding unnecessary costs                |
| Attracting and retaining talented staff  | Enhancing mission capacity and capability |
| Enhancing stakeholder value              | Promoting and increasing innovation       |
| Enhancing partnering and collaboration   | Identifying new opportunities             |

The SEMS should provide a method for improved decision-making in terms of the environment, society and economy into the future. The goal is to create an integrated SEMS that:

- Provides a more robust process that elevates the SEMS to a strategic level at the Installation;
- Makes management systems simple, systematic, measurable, and rigorous so they can guide Fort Carson to a sustainable state;
- Helps Fort Carson and its organizations move toward their sustainability goals;
- Ensures the pace of change towards sustainability exceeds the pace of ecosystem destruction;
- Creates a truly sustainable Army model that incorporates environmental, social and economic dimensions;
- Ensures less waste outputs;
- Increases resource productivity of inputs; and,
- Creates better, continuous management routines.

"The human economic system can persist, ironically, only as long as nature's ecosystem has the capacity to absorb and restore the destructive consequences that occur when human striving is at variance with nature."

*-H. Thomas Johnson, Anders Broms, Profit Beyond Measure*

### 3.0 SCOPE

The managerial scope of the SEMS is represented in Fort Carson's written and signed SEMS Policy Statement. The policy statement reflects the Installation's desire to create a management system that remains useful by including the elements of sustainability throughout all phases. The SEMS will:

- Provide and support decision making in performance of the training mission and business processes;
- Recognize that Fort Carson organizations and people are part of a larger system and community;
- Reflect the on post and off post environmental, societal and economic aspects and impacts of Fort Carson and PCMS activities, products and services;
- Promote global sustainability through education and outreach to employees, partners, customers and other stakeholders;
- Consider internal and external stakeholder concerns;
- Involve everyone who works, trains, visits, supplies or resides on the Installation; and,
- Include lifecycle considerations: impacts during the manufacture of an item or performance of an activity, as well as impacts once that item is no longer serviceable or upon completion of the activity.

The Installation does not envision ISO 14001 registration as necessary. However an audit process will be required for a conforming program. A process for evaluating progress will also be advisable.

The Environmental Quality Working Group (EQWG), a cross-functional team with representatives from major Fort Carson organizations, will be responsible for development of the SEMS Implementation Plan. The plan will include timelines, milestones, responsibility, budget and commitment of resources. This plan will become the working document used to develop the management system. The EQWG will also evaluate and recommend Environmental Management System software that could be expanded upon to encompass Fort Carson sustainability requirements and meet Department of the Army information security requirements.



## 4.0 DEFINITIONS

- Sustainability - Operational practices that allow Fort Carson to accomplish its mission today without compromising our ability to do so in the future.
- Continual Improvement – Process of regularly assessing results in relation to the Installation sustainability and environmental policy in order to improve performance.
- SEMS Audit – A process to determine whether Fort Carson's management system conforms to the ISO 14001 Standard and sustainability and environmental policy, and to communicate the results of this process to upper management and stakeholders.
- SEMS Action Officer – The individual responsible for overseeing the development and implementation of the SEMS program. The Deputy Director, Directorate of Environmental Compliance and Management, as chair of the EQWG, will ensure SEMS implementation and serve as Action Officer.
- SEMS Management Representative (SEMSMR) – The person with overall responsibility for implementation and maintenance of the SEMS. On Fort Carson, the Garrison Commander will be the SEMSMR.
- SEMS Senior Staff Representative – A member of the senior staff who acts as a liaison between the SEMS Team and upper management. The Fort Carson Management of Resources Quality Management Board (MR QMB) co-chaired by the Garrison Commander and the Chief of Staff, representing the garrison and mission functions, respectively, will function as dual SEMS Senior Staff Representatives. The MR QMB will report to the Fort Carson Executive Steering Committee comprised of the Installation Commander and the Command Group.
- Cross Functional Team (CFT) – A group of Fort Carson representatives from various organizations who are responsible for conducting analysis, recommending objectives and targets, and for advising the SEMS Action Officer on other SEMS implementation tasks. The EQWG will function in the CFT role.

## 5.0 SEMS GUIDELINES

### 5.1 POLICY STATEMENT

The Fort Carson SEMS Policy will serve as the foundation for the SEMS and is intended to provide a unifying vision of environmental, social, and economic concern for management, staff, and stakeholders. All Fort Carson personnel are expected to be familiar with and understand the SEMS policy statement.



Fort Carson addressed this requirement early in the sustainability process with the following policy statement, signed by the Installation and Garrison Commanders on 23 Sep 2003.

"Fort Carson embraces sustainability as a partnership between our present and our future. We are committed to accomplishing all of today's missions in a way that will allow our successors to accomplish all of tomorrow's missions. In doing so, we pledge to constantly improve the ways we care for, save, replenish, and find new and better uses for all of the resources entrusted to us.

To execute this policy, we will:

- a. Recognize that sustainability is a responsibility of everyone at Fort Carson – soldiers, civilians, and family members.
- b. Integrate sustainability into all Installation and garrison actions and decisions.
- c. Continually improve our treatment of the environment as a major part of our sustainability program.
- d. Work cooperatively with communities and agencies outside Fort Carson in recognition that achieving sustainability and environmental objectives and targets must be a common goal.
- e. Establish, maintain and regularly review for improvement detailed plans for carrying out our sustainability program.
- f. Monitor and report compliance with our sustainability program and reward improvement.
- g. Comply with all laws, regulations, policies, directives and other requirements relating to sustainability and environmental management.
- h. Communicate this policy to all Installation personnel and make it available to the public."

Conformance to ISO 14001 requires awareness of this statement by everyone on the Installation. Auditors will ask individuals about their knowledge of this policy statement. The statement needs broad distribution and an awareness campaign.

Status: A Sustainability and Environmental Management Policy was signed on 23 Sep 2003. The policy was distributed to all post personnel in Oct 2003. The policy has been posted on the Fort Carson DECam web page (accessible electronically by both internal and external stakeholders and the Fort Carson Sharepoint Portal (accessible by internal stakeholders).

**Action:** Design a process and schedule for regular review of the policy and revisions, as necessary. Design a policy and SEMS awareness campaign, potentially to include posters, emails, and memoranda, to reach the broadest Fort Carson audience. The awareness campaign should include a method for checking general awareness of the policy and the SEMS.

## **5.2 PLANNING**

The Planning phase sets the stage for meeting the requirements of the SEMS through identification of Fort Carson activities and their impacts on society, the economy, and the environment; identifying all legal, Army, and local requirements; setting objectives to accomplish the goals of sustainability and the SEMS; and developing targets to evaluate progress. The SEMS ties aspects, objectives and targets, and legal requirements with strategies, roles and responsibilities and specific tasks at this stage.

### **5.2.1 Aspects and Impacts Analysis**

Often considered the most difficult undertaking for large facilities like Fort Carson, identifying sustainability and environmental aspects and impacts is the most useful and effective activity for ensuring development of a comprehensive SEMS. Identifying significant sustainability aspects and impacts will allow personnel to make decisions and direct resources towards those activities, products and services that have the most significance in terms of Fort Carson's long-term future and desired goals. Fort Carson adopted The Natural Step (TNS) framework (MacDonald, Nov 2001) during its sustainability planning process in Sep 2001. The EQWG will consider the best application of the TNS as well as other sustainability principles with the Fort Carson SEMS. The foremost goal will be to develop a SEMS that makes sense to the Fort Carson organization as well as to the individuals developing, implementing and managing the system.

**Status:** Fort Carson completed a baseline analysis for the sustainability program. Environmental aspects are also identified in FC Regulation (Reg) 200-1, Environmental Protection and Enhancement; FC Reg 200-5 "Maneuver Damage Control Program" and FC Reg 200-6 "Wildlife Management." A procedure for identifying and listing the Installation's activities, products and services, inputs, outputs, and sustainability aspects has not been developed.



Actions: Develop an aspects and impacts procedure that takes the TNS framework and other sustainability approaches into account. The aspects/impacts procedure will address both positive and negative affects. Develop significance criteria, weighting and ranking methodologies to prioritize the management of aspects and impacts. Create a process to identify, evaluate and rate the significance of actual and potential aspects and impacts, including cumulative, past and future impacts and outcomes. Include a process to constructively engage stakeholders throughout the process. Include a mechanism to update the social, economic and environmental aspects as activities change. Consider how to address activities affected during times of deployment.

### **5.2.2 Legal and Other Requirements**

This section primarily refers to methods for continually identifying and communicating requirements that affect Installation activities. Legal requirements are also included as an evaluation factor in determining the significance of aspects and impacts. Fort Carson does a good job of communicating legal requirements to relevant employees and soldiers through training and other programs. The primary area where Fort Carson falls short of conformance is that SEMS requirements are not fully integrated into Fort Carson regulations. That integration must also include evaluation of the extent to which legal requirements limit SEMS actions and identification of the necessity and desirability to pursue changes to those requirements.

Status: Existing Fort Carson regulations identify legal requirements. A mechanism exists for receiving updates to changes in requirements. Legal and other requirements are also communicated to employees through several mechanisms such as on-going training, conferences, meetings and postings.

Action: Expand regulations to include the requirements of the SEMS. Seek resolution of conflicts between legal requirements and SEMS goals and objectives, if any. Document procedures to maintain awareness of legal and other requirements and to update installation policy/regulations.

### **5.2.3 Objectives and Targets**

Once environmental aspects and impacts are identified and ranked, Fort Carson must set objectives and targets to address the highest priority aspects. These aspects should confirm and may serve to refine the Installation's sustainability goals. A procedure for the process of

setting objectives and targets needs to be established. This procedure should capture the processes for setting the 5-year sustainability milestones and the 10-year Strategic Planning goals.

*Make no little plans; they have no magic to stir men's blood...Make big plans...aim high in hope and work.*

Daniel Hudson Burnham

(1846 – 1912)

Architect and City Planner

When setting objectives and targets, the EQWG should remember that the goal of the SEMS is long-term sustainability. On the other hand, the EQWG must recognize that Installation personnel have to accomplish their immediate or daily missions. Thus, SEMS objectives and targets need to balance these often-competing factors while leaving no doubt of the sincerity of Fort Carson's desire to become a sustainable Installation.

Status: Fort Carson has several sustainability and environmental goals, objectives and targets currently in place in strategic, 5-year and annual action plans.

Action: Draft a procedure(s) that defines the process for setting objectives and targets, including external stakeholders. Align goals/objectives and targets in strategic and management plans with significant sustainability and environmental aspects and impacts. Create SEMS Objectives and Targets that will improve sustainability and environmental performance and outcomes.

#### **5.2.4 Management Programs**

Objectives and Targets cannot be met without planning; thus, Fort Carson needs to create management programs for each Objective and Target based on significant aspects. The management programs created must include developing operational practices that allow Fort Carson to accomplish its mission today without compromising its ability to do so in the future, keeping sustainability as the goal.

Status: Sustainability goals have recently been integrated into the Fort Carson 10-Year Strategic Plan. The Strategic Plan along with other management plans form the basis of organizational annual action or performance plans. Action plans will have to be updated to address sustainability objectives and targets at the organizational level.



Action: Create and use a format for planning for the success of Objectives and Targets by assigning responsibilities, setting dates for completion, and establishing reporting requirements. Identify procedures or methods to ensure that action plans align with and support the Installation Strategic Plan. Ensure sustainability principles are considered in all plans.

### **5.3 IMPLEMENTATION AND OPERATION**

Implementation and Operation includes defining roles, communicating SEMS requirements, training, document control, and operational control, and Emergency Preparedness and Response.

#### **5.3.1 Structure and Responsibility**

Fulfilling the requirements of a SEMS will necessitate the efforts of a team and a SEMS Management Representative (SEMSMR). The following are general responsibilities of the SEMS and ownership:

- Fort Carson's Garrison Commander is the SEMSMR IAW Army guidance.
- The SEMSMR oversight, guidance and approval functions will be conducted jointly with the Chief of Staff via the continuous improvement structure, specifically the Manage Resources Quality Management Board so as to be inclusive of both garrison and mission activities.
- The Deputy Director, DECAM, as the Chair of the Environmental Quality Working Group (EQWG), is the Action Officer responsible for ensuring the development of the SEMS Implementation Plan.
- The EQWG with representatives from all major installation organizations will function as the CFT.
- The DECAM will provide subject matter experts in sustainability and environmental management (with in-house personnel and/or consultants) to assist the EQWG with its tasks and throughout SEMS implementation, as needed.
- The GC is responsible for ensuring that the SEMS is established, implemented and maintained in accordance with this manual and is the primary point of contact for reporting on the performance of the SEMS to the command group.
- The EQWG serves as SEMS experts and representatives for the different functional areas on the Installation.
- The EQWG must gather, organize, and disseminate information; develop SEMS procedures, and advise, coordinate, facilitate and monitor SEMS implementation.

- The EQWG has members with decision-making and implementation authority, as well as members who combine expertise on various installation activities with knowledge of sustainability.
- Consultants will require knowledge and experience in sustainability, environmental management, ISO 14001 and SEMS planning and implementation.

It is anticipated that the Installation SEMS system structure will include a SEMS Coordinator (full-time equivalent) to follow through on implementation of the SEMS given experiences with development at other Army installations and federal agencies.

The SEMS Implementation Plan will define the roles and responsibilities of individuals within the Fort Carson organization for establishing, implementing and maintaining the management system, regardless of other responsibilities. The SEMS will require a structure and responsibility for reporting on the performance of the SEMS and as a basis for improvement of the management system and the organization's overall performance.

Status: The GC has designated the EQWG as the responsible team for developing the SEMS Implementation Plan. DECAM representatives and consultants will provide sustainability and environmental management expertise during SEMS planning and implementation.

Action: Identify the personnel resources necessary to implement and maintain the SEMS appropriate for Fort Carson and to ensure its continuation. Document the structure of the SEMS through organizational charts, positions descriptions, responsibility matrices, regulations or other appropriate mechanisms taking into account the existing Command and continuous improvement structures. Define individual roles, responsibilities and authorities in the SEMS and determine a procedure for communicating these requirements to specific employees and other stakeholders.

### **5.3.2 Training, Awareness and Competency**

The Installation has many effective training programs in place and a Sustainability Training Goal that may support SEMS training. Existing training programs need to be augmented to ensure the entire Fort Carson community understands and is aware of SEMS requirements and principles. The Sustainability Training Goal should be used to develop a program for SEMS-specific training in addition to the augmented programs. All training activities



developed within the scope of the SEMS must include the principles of sustainability woven throughout.

Status: Fort Carson has many training programs in place, although records are not always maintained or readily available.

Actions: Identify SEMS training needs for all stakeholders. Develop a training matrix or other tracking system to manage and document sustainability awareness and competence training. Analyze existing training programs for incorporation of SEMS-related education and awareness.

### **5.3.3 Communication**

An effective SEMS requires internal and external communication. Internal communication will foster interest in, awareness of, and ownership of the SEMS. External communication will ensure that all stakeholders understand the Installation's SEMS policy, objectives, targets, and environmental performance and enlist outside parties as contributors and partners to Fort Carson's success. While Fort Carson has several programs in place to ensure external communication, including the yearly Sustainability Conference, there is not a good mechanism for consistent and comprehensive communication to visitors, military family members, contractors, retirees and other Fort Carson users.

Communications need to include progress of the SEMS, progress towards sustainability goals, and in some situations, barriers to progress, and lessons learned. Channels of communication should be tailored to the intended audience. For example, many Fort Carson personnel and residents do not have access to Fort Carson email or other electronic tools of communication, so that would not be a good avenue of communication for them.

Communication is critical to the success of sustaining community support for the Installation and creating internal awareness for continued improvement through feedback.

Status: While several routes of communication exist between Fort Carson and internal and external stakeholders, there is not a good mechanism for communicating sustainability and environmental programs to visitors, military family members, retirees, and other Fort Carson users. The Fort Carson Strategic Plan and 5-Year Sustainability Plan addresses Communication and Partnerships as Sustainability Goals that should be integrated into the SEMS.

Actions: Develop and implement a communication plan and procedures for communicating the SEMS internally (between levels and functions within Fort Carson) and soliciting, receiving, documenting and reporting to external communities. Determine how best to integrate the partnership and communication goals of the Fort Carson Strategic Plan and 5-Year Sustainability Plan into the SEMS.

#### **5.3.4 Documentation**

Fort Carson will develop and maintain a SEMS documentation system, including this SEMS Manual and corresponding procedures, work instructions, SEMS forms, records, and meeting minutes. The document control system procedures should ensure all SEMS documents adhere to the same standard for development, review, editing, and approval. Working within the Army Records Information Management System (ARIMS), AR 25-400-2, SEMS documents must be properly retained and capable of easy retrieval when needed.

Status: Fort Carson is researching several software systems for developing and maintaining SEMS documents through the post-wide intranet.

Actions: Create the SEMS documentation system procedures, which will be compatible with SEMS software and post-wide application.

#### **5.3.5 Document Control**

The purposes for document control are to ensure that documents can be located, are periodically reviewed, are current and available to affected personnel, and that obsolete documents are removed.

Status: There is not an Installation-wide document control procedure except as established by Army record-keeping systems. SEMS software should include document control capability.

Actions: Create a written document control system procedure and strategy for SEMS documents. Create a master list of documents to be maintained. Ensure SEMS software provides document control capacity and capability.



### **5.3.6 Operational Control**

Fort Carson must develop and update procedures and regulations that prescribe how operations with significant impacts are to be controlled and improved in order to meet objectives and targets for Installation sustainability. These procedures and regulations must ensure that all activities (including contracted activities) are held to the same standards and are subject to SEMS audit.

Status: Fort Carson uses Regs 200-1, 200-5, and 200-6 to require operational procedures for most activities with potential negative impacts on the environment. It is undetermined to what extent social and economic aspects are incorporated into operational procedures. While long-term contractors are generally held to the standards of Fort Carson's environmental programs, short-term contractors and suppliers are not controlled in the same manner.

Action: List the operations and activities associated with the identified significant sustainability aspects, objectives and targets. Once significant aspects are identified, develop procedures that will ensure activities are carried out under specified conditions in alignment with sustainability criteria. Ensure that the procedure requires long-term, sustainable controls that include environmental, social, and economic impacts for all who perform work on the Installation. Ensure a process for designing new procedures and maintaining or improving existing operating procedures. Ensure mechanisms are in place for communicating the procedures to all operators, whether Soldiers, civilians, suppliers, contractors, or other stakeholders.

### **5.3.7 Emergency Preparedness and Response**

Despite Fort Carson's best efforts, emergency situations can occur from normal military and business operations. As a military installation and potential target for terrorism, Fort Carson must also have contingencies for terror-related emergencies. Nuclear, biological and chemical weapons preparedness should be addressed. Fire, weather and other natural disaster emergency operations may be included if sustainability impacts would be anticipated. Effective emergency preparation and response can reduce injuries, prevent or minimize environmental impacts, protect Soldiers, employees, and nearby communities, reduce asset losses, and minimize downtime.

An effective emergency preparedness and response (EP&R) program should include requirements for:

- assessing the potential for accidents and emergencies;
- preventing incidents and their associated sustainability impacts;
- responding to incidents (emergency plans and procedures);
- testing of emergency plans and procedures periodically; and
- mitigating sustainability impacts associated with accidents and emergencies.

Because the SEMS will mandate continual improvement, it is important to review emergency response performance after an incident has occurred so that deficiencies may be corrected. The purpose of the review is to determine if more training is needed or if emergency plans and procedures should be revised.

Status: Fort Carson has plans to address most of the potential emergencies on site; however, these procedures are not adequately tested for effectiveness. Fort Carson must work with the Installation's First Responders to create a schedule for conducting drills to test the Emergency Preparedness and Response Plans. After action reviews of emergency response actions are normally performed and documented for improved future response.

Action: Incorporate emergency preparedness and response plans in the SEMS. Develop a schedule and obtain agreement for drills that ensure emergency plans are effective. Ensure that existing procedures are up-to-date. Ensure procedures include prevention and mitigation of sustainability-related impacts that may be associated with the spill or other emergency situation.

## **5.4 CHECKING AND CORRECTIVE ACTION**

Checking and corrective action are important to the success of continual improvement, which is key to the success of the SEMS. Verification of and adherence to policies, procedures and work instructions will reveal progress and areas in need of improvement. Monitoring, measurement and procedures for non-conformance, corrective action, preventive action, auditing and recording findings are all part of Checking and Corrective Action. Methods created under the framework of this section will be the foundation for continual improvement.

To ensure the long-term viability of the SEMS, corrective actions must be well-thought-out improvements to the existing system or activity. A standard of continuous re-evaluation of



the level of sustainability will need to be implemented. Again, easy, short-term solutions usually will not achieve sustainability. As stated above, though, SEMS must recognize, and accommodate, the need for accomplishment of present missions while working toward sustainability.

#### **5.4.1 Monitoring and Measurement**

The results of SEMS efforts are easier to demonstrate when current and reliable data are available. The Installation should develop methods to:

- Monitor key characteristics of operations and activities that can have significant sustainability impacts and/or compliance consequences;
- Track performance (including progress in achieving objectives and targets);
- Calibrate and maintain monitoring equipment; and
- Periodically evaluate compliance with applicable laws and regulations through internal audits.

The SEMS will require periodic evaluation and documentation to show progress towards goals outlined in the SEMS Policies and Statement and the Objectives and Targets. As the SEMS expands to all organizations and activities on Fort Carson, it will be important to use a standard reporting system to ensure that documents presented by the GC and EQWG for management review are concise. The metrics should complement the Strategic Plan and Sustainability Goals. The auditing means should incorporate existing tools, such as the Environmental Performance Assessment System (EPAS), to the extent possible.

The purposes of monitoring and measuring are to:

- Evaluate and record social, economic, and environmental performance;
- Analyze any differences between the intended and actual benefits of the SEMS;
- Review the performance of each SEMS program developed to address significant impacts;
- Assess compliance with legal requirements;
- Identify and address areas requiring corrective action;
- Provide recommendations for incorporating findings into the continuous improvement cycle; and,
- Track corrective actions taken in response to deficiencies that are identified.

**Status:** Several methods are used for tracking, monitoring and measuring at Fort Carson; however, an overall, high-level report (e.g. Dash Board) may be appropriate to develop. This report should be detailed at the directorate level with rollups to the highest level of Command for quick review and evaluation. The report should contain metrics that tie back to the Strategic Plan and Fort Carson's 25 Year Sustainability Goals.

**Action:** Create a standardized reporting format and procedure for monitoring and measuring SEMS performance that requires comprehensive and systemic corrective action. Ensure all equipment calibration is performed in accordance with appropriate standards by developing procedures and tracking systems.

#### **5.4.2 Nonconformance, Corrective and Preventive Action**

Nonconformance refers to deficiencies in the management system rather than with regulatory compliance unless the regulatory noncompliance is caused by a deficiency in the system. Corrective actions are necessary when deficiencies are identified and the necessary controls put in place to prevent future nonconformance. The EPAS has a method for addressing environmental corrective actions; however, it has not been formalized for the SEMS. The EPAS system may provide a method for formalizing the SEMS corrective action process, making all corrective action records uniform, whether for audit findings, compliance-related issues, sustainability goals, or the SEMS. The EPAS, however, might not meet the more systemic requirements of a SEMS. One recommendation is to create a database for tracking corrective action similar to Table 5.4.2.1.

**Table 5.4.2.1 Corrective Action Tracking Database**

| <b>Corrective/Preventive<br/>Action Number</b> | <b>Request<br/>Date</b> | <b>Responsible<br/>Party</b> | <b>Due Date</b> | <b>Closeout<br/>Date</b> |
|--|-------------------------|------------------------------|-----------------|--------------------------|
|  |                         |                              |                 |                          |
|  |                         |                              |                 |                          |
|  |                         |                              |                 |                          |

A root-cause analysis procedure would formalize the process for specific non-conformances by identifying opportunities to prevent recurrences of negative environmental, social, or economic impacts. A process to identify problems before they become deficiencies and prevent nonconformance would be required by this element of the standard.



Status: FC Reg 200-1 has requirements for corrective actions, although they are not non-conformances associated with the SEMS. EPAS or separate tool needs to be explored for potential application to this standard.

Action: Develop a procedure for tracking preventive, non-conformances and corrective actions. Develop a root-cause analysis program to prevent negative impacts from recurring. Include sustainability principles in the corrective action process to include social and environmental impacts in the non-conformance identification system. A means of tracking through the SEMS software would be desirable.

#### **5.4.3 Records**

The purpose of records management is to help Fort Carson demonstrate that it is implementing the SEMS as designed. Records may need to be provided to external stakeholders, auditors, and regulators as evidence of SEMS implementation. Key questions to ask when developing a records management program include:

- What records are kept?
- Who keeps them?
- Where are they kept?
- How are they kept?
- How long are they kept?
- How are they accessed?
- How are they disposed?

Status: The Army recently (Oct 2003) developed the Army Records Information Management System (ARIMS) and issued AR 25-400-2 to address the Records Section of the ISO requirement. The ARIMS program fully implemented at Fort Carson will allow for identification, maintenance, and disposition of records. Most SEMS software also provides a mechanism for record retention.

Action: Train Installation personnel and roll out the ARIMS system in accordance with the ISO Standard. Evaluate software capability and capacity for recordkeeping in accordance with the ARIMS.

#### **5.4.4 SEMS Audit**

The SEMS will need to be formally audited to ensure that all requirements are being carried out in accordance with the SEMS policy, the SEMS Implementation Plan, the Installation's Sustainability Goals and Plans, the ISO 14001 standard and any other adopted procedures. Expanding the EPAS system to include elements of the SEMS and continuing the current internal auditing procedures at Fort Carson will likely meet this requirement.

**Status:** Several auditing systems are in place at Fort Carson, including Compliance Assistance Visits and EPAS. EPAS has been modified to address EMS (not SEMS) related reviews.

**Action:** Set up a regular audit program for the SEMS. Ensure the audit program addresses all areas of the SEMS. Modify EPAS to include SEMS reviews.

#### **5.5 COMMAND AND MANAGEMENT REVIEW**

At least annually, Command and Installation management personnel must review the SEMS to determine its suitability, adequacy, and effectiveness. The Installation should take advantage of existing meetings with the Garrison Commander and Commanding General by including a review of the SEMS on the agenda with appropriate time allowed for adequate review and discussion. The SEMS review should include a review of the policy statement and awareness of its elements, a review of measures taken to improve positive and alleviate negative impacts, a review of audit findings, and a general review of the management system (benefits and detriments). The Command and Management Review must be documented and included in the SEMS documentation system.

**Status:** The Command and Installation management personnel conduct meetings to review and track performance of the strategic plan. The continuous improvement structure provides further opportunities for performance reviews. Direct communication through other meetings such as the Command and Staff or Garrison Staff meetings are also used to review progress.

**Action:** Determine how best to integrate SEMS management review requirements with established meetings and processes. Set up a schedule and format for the SEMS Command and Management Review.



## 6.0 SUMMARY OF ACTIONS REQUIRED AND RESPONSIBILITY ASSIGNMENT MATRIX

This SEMS Manual provides an overview and general direction for implementation of the SEMS. The Fort Carson Gap Analysis will be used in conjunction with the manual, the ISO standard and sustainability references to provide the detail the EQWG will need in developing the SEMS.

Responsible parties must be assigned to each action in the implementation plan. The intent of assigning responsibility is to ensure all the steps are taken to create an effective SEMS by creating a system of reporting by teams or individuals with the authority and job function to make the actions reality.

An example of a Responsibility Matrix (RM) is provided in Figure 6.1. The RM should be finalized by the EQWG and GC to be modified and further developed in accordance with changing conditions at the Installation. The Green/Amber/Red system is recommended for charting general progress, although more detail will be needed for a thorough determination of further actions needed and success. The matrix will become part of the SEMS Implementation Plan.

SEMS development will not be simple or without challenge. We commend the EQWG and all of the Fort Carson Soldiers, employees, contractors, family members, and all other stakeholders within our community for assisting us with this SEMS and accompanying us on our sustainability journey.

**Table 6.1 SEMS  
Responsibility Matrix**

| <b><u>Section</u></b>                            | <b><u>Action</u></b>   | <b><u>Responsible Party</u></b> | <b><u>Status</u></b> |
|--|--|---------------------------------|----------------------|
| <b>POLICY STATEMENT</b>                          | <b>Design</b> an awareness campaign, potentially to include posters, emails, and memoranda, to reach the broadest Fort Carson audience. The awareness campaign should include a method for checking general awareness of the SEMS.   |                                 |                      |
| <b>PLANNING</b>                                  |  |                                 |                      |
| <b><i>Environmental Aspects</i></b>              | Determine the method for identifying aspects and impacts and a guide for use. Create a method for distribution, use, and education of the spreadsheet. Develop a working team to identify significant impacts and make recommendations to alleviate those impacts. Create a plan for continuing this process indefinitely. |                                 |                      |
| <b><i>Legal and Other Requirements</i></b>       | Expand regulations to include the requirements of the SEMS   |                                 |                      |
| <b><i>Objectives and Targets</i></b>             | <b>Create SEMS Objectives and Targets</b> by determining the significant environmental, social, and economic impacts of Fort Carson activities.  |                                 |                      |
| <b><i>Management Programs</i></b>                | Create and use a format for planning for the success of Objectives and Targets by assigning responsibilities, setting dates for completion, and requirements for reporting.  |                                 |                      |
| <b>IMPLEMENTATION AND OPERATION</b>              |  |                                 |                      |
| <b><i>Structure and Responsibility</i></b>       | <b>Develop the CFT, set up a meeting schedule, obtain commitment, and determine if a full-time SEMS Coordinator is needed.</b>   |                                 |                      |
| <b><i>Training, Awareness and Competence</i></b> | Develop a training matrix or other tracking system to manage and document SEMS training. Analyze existing training programs for incorporation of SEMS. Develop plans for a SEMS-specific training program.   |                                 |                      |
| <b><i>Communication</i></b>                      | <b>Develop and implement a communication plan and procedures for communicating the SEMS internally (between levels and functions within Fort Carson) and soliciting, receiving, documenting and reporting to external communities.</b>   |                                 |                      |
| <b><i>Documentation</i></b>                      | Create the SEMS documentation system procedures and analyze SEMS software for purchase and set up.   |                                 |                      |



|   |  |  |  |
|---|--|--|--|
| <b>Document Control</b>   | Create a document control system procedure. Create a master list of documents to be maintained.  |  |  |
| <b>Operational Control</b>                                      | Once significant impacts are identified, develop a procedure that shows how those impacts will be controlled. Ensure that the procedure requires long-term, sustainable controls, and not simple, "quick fixes" that do not address the long-term situation. |  |  |
| <b>Emergency Preparedness and Response</b>                      | Develop a schedule and obtain agreement for drills that ensure emergency plans are effective.  |  |  |
| <b>CHECKING AND CORRECTIVE ACTION</b>                           |  |  |  |
| <b>Monitoring and Measurement</b>                               | Create a standardized reporting format and procedure for monitoring and measuring SEMS performance that requires comprehensive and systemic evaluation using the System Conditions.  |  |  |
| <b>Nonconformance, Corrective and Preventive Action</b>         | Develop a procedure for tracking non-conformances and corrective actions. Develop a root-cause analysis program to prevent negative impacts from recurring.  |  |  |
| <b>Records</b>  | Train Installation personnel and roll out the ARIMS system.  |  |  |
| <b>Sustainability and Environmental Management System Audit</b> | Set up a regular audit program for the SEMS. Ensure the audit program addresses all areas of the SEMS.   |  |  |
| <b>COMMAND AND MANAGEMENT REVIEW</b>                            | Set up a schedule and format for the SEMS Command and Management Review.   |  |  |